

WHAT IS CLAIMED IS:

1           1.     A method for processing operations in a system including a bus, a  
2 target device and devices capable of accessing the target device over the bus, wherein  
3 the target device performs:  
4           receiving a transaction request from one of the devices over the bus;  
5           determining whether a delayed read request is pending after receiving the  
6 transaction request;  
7           issuing a command to disconnect the device initiating the transaction request  
8 from the bus; and  
9           allowing the device initiating the transaction request to reconnect to the bus  
10 and complete the transaction request after the delayed read request is completed.

1           2.     The method of claim 1, wherein the delayed read request is directed  
2 toward a first memory region and the transaction request comprises an Input/Output  
3 request directed toward a second memory region.

1           3.     The method of claim 1, wherein the first and second memory regions  
2 are implemented within the target device.

1           4.     The method of claim 1, wherein the command to disconnect comprises  
2 a retry disconnect that occurs before data subject to the transaction request is  
3 transmitted.

1           5.     The method of claim 1, further comprising:  
2           determining whether requested data for the delayed read request is available  
3 to return, wherein the command to disconnect the device initiating the transaction  
4 request is issued after the requested data for the delayed read request is determined to  
5 be available to return.

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1           6.     The method of claim 5, further comprising:  
2           allowing the transaction request to proceed if the delayed read request is  
3     pending and if the requested data for the delayed read request is not available to  
4     return.

1           7.     The method of claim 6, further comprising:  
2           after allowing the transaction request to proceed, determining that all the  
3     requested data is available to return, wherein the command to disconnect is issued  
4     after determining that all the requested data is available to return after allowing the  
5     transaction request to proceed.

1           8.     The method of claim 7, wherein the transaction request will attempt to  
2     reconnect to the target device to complete an unfinished portion of the transaction  
3     request that did not complete as a result of the issuing of the command to disconnect.

1           9.     The method of claim 8, wherein the transaction request comprises a  
2     write request, wherein the target device receives write data while the delayed read  
3     request is pending and the requested data is not available to return, wherein the  
4     device issuing the write request will transmit that portion of the write data not sent as  
5     a result of the issuing of the command to disconnect during a subsequent reconnect to  
6     the target device.

1           10.    The method of claim 1, wherein the bus, target device, and devices  
2     communicate using the Peripheral Component Interconnect (PCI) protocol, and  
3     wherein the devices that initiate the delayed read request and transaction request  
4     comprise master devices for the bus.

1           11.    The method of claim 1, further comprising;  
2           determining whether a variable indicates a first state or a second state,  
3     wherein the state indicated by the variable determines when the target device issues

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4 the command to disconnect the device initiating the transaction request while the  
5 delayed read request is pending.

1 12. The method of claim 11, further comprising:  
2 issuing the command to disconnect the device initiating the transaction  
3 request when the device that initiated the delayed read request attempts to reconnect  
4 to the target device if the variable indicates the first state; and  
5 issuing the command to disconnect the device initiating the transaction  
6 request after all the requested data for the delayed read request is determined to be  
7 available to return if the variable indicates the second state.

1 13. The method of claim 12, further comprising:  
2 allowing the transaction request to proceed during a time at which all the  
3 requested data for the delayed read request is not available to return if the variable  
4 indicates the second state.

1 14. The method of claim 1, wherein transaction request and delayed read  
2 request are initiated from different devices.

1 15. A system for processing operations in communication with devices,  
2 comprising:  
3 a target device;  
4 a bus, wherein the devices are capable of accessing the target device over the  
5 bus;  
6 means for receiving a transaction request from one of the devices over the  
7 bus;  
8 means for determining whether a delayed read request is pending after  
9 receiving the transaction request;  
10 means for issuing a command to disconnect the device initiating the  
11 transaction request from the bus; and

Year	1900	1901	1902	1903	1904	1905	1906	1907	1908	1909	1910	1911	1912	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938	1939	1940	1941	1942	1943	1944	1945	1946	1947	1948	1949	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100
Population	1,000,000	1,050,000	1,100,000	1,150,000	1,200,000	1,250,000	1,300,000	1,350,000	1,400,000	1,450,000	1,500,000	1,550,000	1,600,000	1,650,000	1,700,000	1,750,000	1,800,000	1,850,000	1,900,000	1,950,000	2,000,000	2,050,000	2,100,000	2,150,000	2,200,000	2,250,000	2,300,000	2,350,000	2,400,000	2,450,000	2,500,000	2,550,000	2,600,000	2,650,000	2,700,000	2,750,000	2,800,000	2,850,000	2,900,000	2,950,000	3,000,000	3,050,000	3,100,000	3,150,000	3,200,000	3,250,000	3,300,000	3,350,000	3,400,000	3,450,000	3,500,000	3,550,000	3,600,000	3,650,000	3,700,000	3,750,000	3,800,000	3,850,000	3,900,000	3,950,000	4,000,000	4,050,000	4,100,000	4,150,000	4,200,000	4,250,000	4,300,000	4,350,000	4,400,000	4,450,000	4,500,000	4,550,000	4,600,000	4,650,000	4,700,000	4,750,000	4,800,000	4,850,000	4,900,000	4,950,000	5,000,000	5,050,000	5,100,000	5,150,000	5,200,000	5,250,000	5,300,000	5,350,000	5,400,000	5,450,000	5,500,000	5,550,000	5,600,000	5,650,000	5,700,000	5,750,000	5,800,000	5,850,000	5,900,000	5,950,000	6,000,000	6,050,000	6,100,000	6,150,000	6,200,000	6,250,000	6,300,000	6,350,000	6,400,000	6,450,000	6,500,000	6,550,000	6,600,000	6,650,000	6,700,000	6,750,000	6,800,000	6,850,000	6,900,000	6,950,000	7,000,000	7,050,000	7,100,000	7,150,000	7,200,000	7,250,000	7,300,000	7,350,000	7,400,000	7,450,000	7,500,000	7,550,000	7,600,000	7,650,000	7,700,000	7,750,000	7,80																																																																

1           20.     The system of claim 19, wherein the transaction request will attempt to  
2     reconnect to the target device to complete an unfinished portion of the transaction  
3     request that did not complete as a result of the issuing of the command to disconnect.

1           21.    The system of claim 15, wherein the bus, target device, and devices  
2   communicate using the Peripheral Component Interconnect (PCI) protocol.

1           22.    The system of claim 15, further comprising;  
2           means for determining whether a variable indicates a first state or a second  
3   state, wherein the state indicated by the variable determines when the target device  
4   issues the command to disconnect the device initiating the transaction request while  
5   the delayed read request is pending.

1           23.    An article of manufacture including code for processing operations in  
2   a system including a bus, a target device and devices capable of accessing the target  
3   device over the bus, wherein the code causes the target device to perform:  
4           receiving a transaction request from one of the devices over the bus;  
5           determining whether a delayed read request is pending after receiving the  
6   transaction request;  
7           issuing a command to disconnect the device initiating the transaction request  
8   from the bus; and  
9           allowing the device initiating the transaction request to reconnect to the bus  
10   and complete the transaction request after the delayed read request is completed.

1           24.    The article of manufacture of claim 23, wherein the delayed read  
2   request is directed toward a first memory region and the transaction request  
3   comprises an Input/Output request directed toward a second memory region.

1           25.    The article of manufacture of claim 23, wherein the first and second  
2   memory regions are implemented within the target device.

1           26.    The article of manufacture of claim 23, wherein the command to  
2   disconnect comprises a retry disconnect that occurs before data subject to the  
3   transaction request is transmitted.

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1           27.    The article of manufacture of claim 23, further comprising:  
2           determining whether requested data for the delayed read request is available  
3   to return, wherein the command to disconnect the device initiating the transaction  
4   request is issued after the requested data for the delayed read request is determined to  
5   be available to return.

1           28.    The article of manufacture of claim 27, further comprising:  
2           allowing the transaction request to proceed if the delayed read request is  
3   pending and if the requested data for the delayed read request is not available to  
4   return.

1           29.    The article of manufacture of claim 28, further comprising:  
2           after allowing the transaction request to proceed, determining that all the  
3   requested data is available to return, wherein the command to disconnect is issued  
4   after determining that all the requested data is available to return after allowing the  
5   transaction request to proceed.

1           30.    The article of manufacture of claim 29, wherein the transaction request  
2   will attempt to reconnect to the target device to complete an unfinished portion of the  
3   transaction request that did not complete as a result of the issuing of the command to  
4   disconnect.

1           31.    The article of manufacture of claim 30, wherein the transaction request  
2   comprises a write request, wherein the target device receives write data while the  
3   delayed read request is pending and the requested data is not available to return,  
4   wherein the device issuing the write request will transmit that portion of the write  
5   data not sent as a result of the issuing of the command to disconnect during a  
6   subsequent reconnect to the target device.

1           32.    The article of manufacture of claim 23, wherein the bus, target device,  
2   and devices communicate using the Peripheral Component Interconnect (PCI)

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3 protocol, and wherein the devices that initiate the delayed read request and  
4 transaction request comprise master devices for the bus.

1 33. The article of manufacture of claim 23, further comprising;  
2 determining whether a variable indicates a first state or a second state,  
3 wherein the state indicated by the variable determines when the target device issues  
4 the command to disconnect the device initiating the transaction request while the  
5 delayed read request is pending.

1 34. The article of manufacture of claim 33, further comprising:  
2 issuing the command to disconnect the device initiating the transaction  
3 request when the device that initiated the delayed read request attempts to reconnect  
4 to the target device if the variable indicates the first state; and  
5 issuing the command to disconnect the device initiating the transaction  
6 request after all the requested data for the delayed read request is determined to be  
7 available to return if the variable indicates the second state.

1 35. The article of manufacture of claim 34, further comprising:  
2 allowing the transaction request to proceed during a time at which all the  
3 requested data for the delayed read request is not available to return if the variable  
4 indicates the second state.

1 36. The article of manufacture of claim 23, wherein transaction request  
2 and delayed read request are initiated from different devices.

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